

## New Species and New State Records of *Sialis* (Neuroptera: Sialidae)

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The genus *Sialis* is found throughout the Holarctic region, but related genera are reported from South America, South Africa, Madagascar, and Australia. The Nearctic species were monographed by Ross (1937), who figured and described 19 species. Since then only a single species has been described, *S. nina* Townsend (1939) from Kentucky. Three new species which have been discovered in material acquired over the last year are described herein, and new state records are presented for 8 other eastern species. The terminology proposed by Ross is used here.

### *Sialis dreisbachi* Flint, new species (Figs. 1-4)

This species is most closely related to *S. hamata* Ross, which is recorded from western North America, but the male genitalia of the two species are quite different. The terminal plate (t) has a much longer and more slender apical neck and the genital plate (g) lacks the recurved apical hook in the male of *dreisbachi*. The female genitalia differ from those of any other described species in that they possess a lobed posterior margin on the seventh sternum and a mesal cleft and depression on the eighth sternum.

MALE.—Length of forewing, 10 mm. Black, except for orange raised areas on posterior of head, between antennae, and around eyes. Ninth sternum bandlike, setae short. Lateral plates (l) ovoid, with many short setae. Genital plate (g) small, with hooks barely produced and without apical recurved portion. Terminal plate (t) in caudal view about half as wide as long, slightly produced into two low knobs subapically, apex developed into a long narrow neck which articulates with genital plate.

FEMALE.—Length of forewing 12 mm. General structure and color as in male. Seventh sternum produced into a rounded

lobe posteromesally. Eighth sternum with a broad U-shaped emargination posteromesally; mesally depressed and darkened. Ninth sternum membranous.

Holotype male, allotype female, paratype male: Michigan, Schoolcraft County, June 5, 1959, R. & K. Dreisbach. USNM 67067.

***Sialis contigua* Flint, new species (Figs. 5-8)**

*S. contigua* is closely related to the eastern *S. aequalis* Banks. The two lobes of the terminal plate in *contigua* are almost touching rather than widely separated, the genital hook is very broad much as in *S. vagans* Ross, and the lateral processes from the genital plate have a darkened sclerite within them. The genital segments of the female do not show any differences from *aequalis* or *vagans*.

MALE.—Length of forewing 10 mm. Coloration as in *dreisbachi*. Ninth sternum produced into a large conical flap covering much of the genitalia ventrally. Lateral plates quadrate, with apicolateral angles slightly produced, with many short setae. Genital plate forming a narrow band beneath terminal plate; hooks wide in lateral aspect with tips produced into a small point; lateral margins produced into large membranous flaps with an internal darkened sclerotization. Terminal plate in caudal view broad apically, with a deep narrow cleft mesally, the two lateral lobes almost touching.

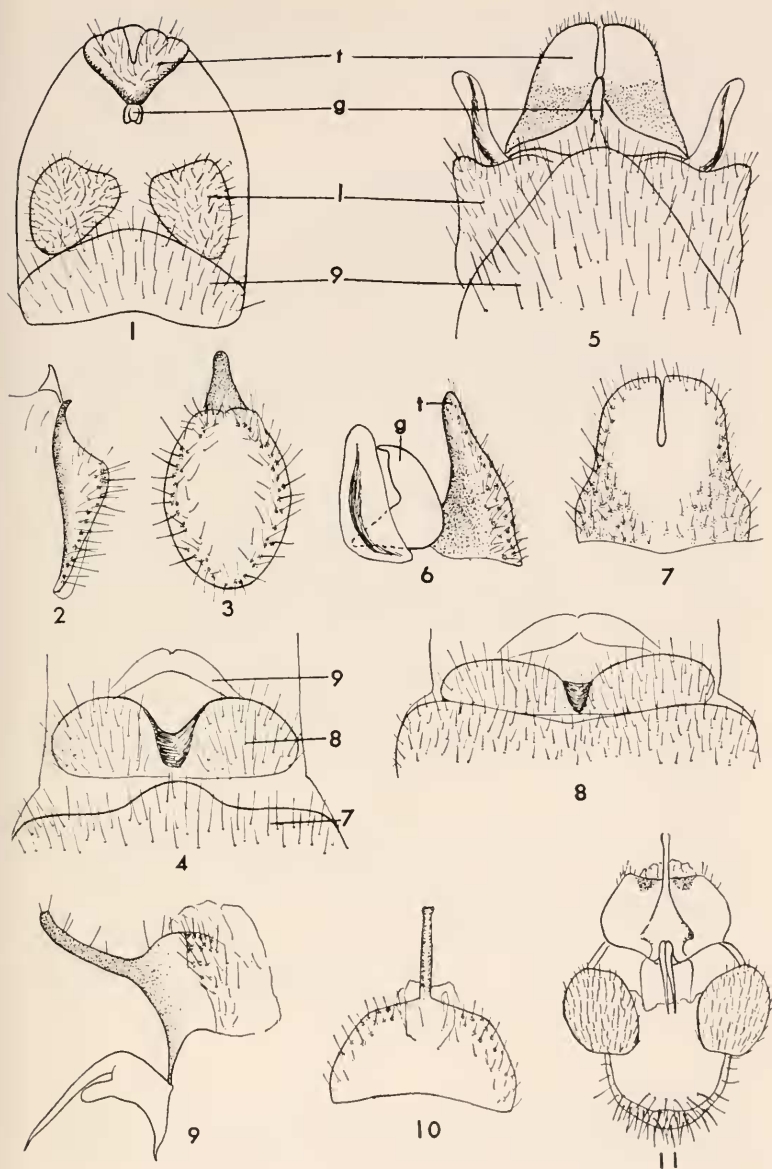
FEMALE.—Length of forewing 10-11 mm. General structure and color as in male. Seventh sternum with posterior margin almost straight. Eighth sternum with a broadly and shallowly emarginate posterior margin; mesally with a depressed area almost completely separating lateral lobes. Ninth sternum membranous.

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EXPLANATION OF FIGURES

*Sialis dreisbachi* new species, Figs. 1-4; *Sialis contigua* new species, Figs. 5-8; *Sialis spangleri* new species, Figs. 9-11.

FIGS. 1, 5, and 11, ventral view of male genitalis; Figs. 2, 6, and 9, lateral view of terminal and genital plates of male; Figs. 3, 7, and 10 caudal view of terminal plate of male; Figs. 4 and 8, ventral view of genitalia of female. Abbreviations: g, genital plate; l, lateral plate; t, terminal plate; 7, 8, 9, abdominal sterna.



Holotype male, allotype female, paratypes 1 ♂ 8 ♀: Virginia, Highland County, bridge on route 220 over East Branch Potomac River, May 19, 1963, O. S. Flint, Jr. & W. D. Field. USNM 67068.

***Sialis spangleri* Flint, new species (Figs. 9–11)**

This species is most closely related to *S. mohri* Ross but differs in the undivided process of the terminal plate, the presence of a basal lobe on the genital hooks, and the much smaller lateral plates.

The type was collected as a pupa on May 14, 1963, the adult emerging 2 days later. The pupa was found on top of the ground, probably pushed out of an adjacent crayfish burrow, close to the stream above Swallow Falls.

MALE.—Length of forewing 10 mm. Coloration as in *dreisbachi*. Ninth sternum very narrow with some short hair mesally, laterally curving posteriad and ending beneath lateral plates. Lateral plates small, ovoid, with many short setae. Genital plate consisting of a pair of whip-like apical blades about 3 times as long as rounded basal lobe. Terminal plate short and broad, with a single, long, slender process arising from venter near apex.

Holotype male: Maryland, Garrett County, Swallow Falls State Park near Oakland, May 14, 1963, P. J. Spangler. USNM 67076.

The following represent new state records and are based on material in the United States National Museum.

***Sialis americana* (Ramb.)**

DISTRICT OF COLUMBIA.—Washington, June 25, 1921, H. S. Barber, 1 ♂. VIRGINIA.—Nansemond County, Dismal Swamp, July 6–7, 1962, O. S. Flint, 3 ♂ 4 ♀.

***Sialis hasta* Ross**

ARKANSAS.—Garland County, creek on route 270, 2 miles east of Montgomery County boundary, April 7, 1963, B. C. Marshall, 1 ♂.

***Sialis infumata* Newman**

VIRGINIA.—Fauquier County, Broad Run at Thorofare Gap, April 29, 1962, O. S. Flint, 1 ♂.

***Sialis iola* Ross**

VIRGINIA.—Montgomery County, June 1, 1901, E. A. Smyth Collection, 1 ♂ 1 ♀.

***Sialis itasca* Ross**

GEORGIA.—Atlanta, May 21, 1936, P. W. Fattig, 1 ♂. MARYLAND.—Plummers Island, June 12, 1919, Schwarz & Barber, 1 ♂. 7-locks (Montgomery County), June 2, 1919, H. S. Barber, 1 ♂. MINNESOTA.—Pine County, 3 miles east of Pine City, June 7, 1949, S. I. Parfin, 1 ♂.

***Sialis joppa* Ross**

MARYLAND.—Silver Spring, May 1, 1954, L. Walkley, 1 ♂. VIRGINIA.—Shenandoah National Park, Skyline Drive mile-post 71.5, May 20, 1961, O. S. Flint, 1 ♂.

***Sialis mohri* Ross**

ARKANSAS.—Montgomery County, Upper Lake Ouachita, near Washita, April 7, 1963, B. C. Marshall, 97 ♂♂ ♀♀ (swarming over lake by the thousands); same but May 5, 1963, 2 ♂ 2 ♀. OKLAHOMA.—Stillwater, April 2, 1950, 1 ♂.

***Sialis vagans* Ross**

CONNECTICUT.—Silver Mine, June 1, 1938, G. P. Englehardt, 1 ♂. Stamford, April, 1942, Bartlett Tree Research Laboratory Collection, 1 ♂. GEORGIA.—Newman, April 28, 1931, P. W. Fattig, 1 ♂. VIRGINIA.—Lignum, beside stream, April 21, 1951, A. B. Gurney, 1 ♂.

## REFERENCES CITED

- Ross, H. H. 1937. Nearctic alder flies of the genus *Sialis* (Megaloptera, Sialidae). Bull. Ill. Nat. Hist. Surv. 23: 57-78.  
TOWNSEND, L. H. 1939. A new species of *Sialis* (Megaloptera, Sialidae) from Kentucky. Proc. Ent. Soc. Wash. 41: 224-226.